UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,060	02/08/2005	Zhiming Suo	US 1421/05 (VA)	4405

43002 7590 02/01/2007

DINESH AGARWAL, P.C.
5350 SHAWNEE ROAD
SUITE 330
ALEXANDRIA, VA 22312

EXAMINER	
WANG, CHANG YU	
ART UNIT	PAPER NUMBER
1649	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/01/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/524,060	SUO ET AL.	
	Examiner	Art Unit	
	Chang-Yu Wang	1649	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *November 21, 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3 and 5-34* is/are pending in the application.

4a) Of the above claim(s) *3,5,6,8 and 14-33* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,7,9-13 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *2/8/05* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

RESPONSE TO AMENDMENT

Status of Application/Amendments/claims

Applicant's amendment filed November 21, 2006 is acknowledged. Claim 4 is cancelled. Claims 1-3, 5-34 are pending in this application. Claims 3, 5, 6, 8, 14-33 are withdrawn. Claims 1, 2, 7, 9-13, 34 are under examination in light of soluble beta-amyloid. The text of those sections of Title 35, U.S. Code, not included in this action can be found in a prior office action.

Specification

The disclosure is objected to because it contains an embedded hyperlink and/or other form of browser-executable code (p. 41-43 in the listed references). Applicant is required to delete the embedded hyperlink and/or other form of browser-executable code. See MPEP § 608.01.

Claim Objections

Claim 1 is objected to because of the following informalities: Applicant is required to spell out GRK5 at the first usage. Appropriate correction is required.

Claim Rejections/Objections Withdrawn

The rejection of claim 34 under 35 U.S.C. 112, first paragraph, for failing to comply with the written description requirement is withdrawn in response to Applicant's amendment to the claim.

The rejection of claims 1, 2, 7, 9-13, and 34 under 35 U.S.C. 112, second paragraph, for omitting essential steps is withdrawn in response to Applicant's amendment to the claims.

Claim Rejections/Objections Maintained

Claim Rejections - 35 USC § 112

The rejection of claims 1, 2, 7, 9-13 and 34 under 35 U.S.C. §112, first paragraph, because the specification does not enable the invention commensurate in scope with the claims is maintained for reasons of record in the previous office action.

Applicant argues that amended claim 1 is enabled because the recitation of early stage is deleted and the omitted steps are added. Applicant argues that amended claim 34 is also enabled for in vivo because Applicant asserts that the in vitro data and animal model assays support the in vivo application.

Applicant's arguments have been fully considered but they are not persuasive. Applicant shows that the distribution of GRK5 changes after stimulating with soluble Aβ1-42/1-40 in cultured microglial cells in vitro or in transgenic mice of AD model, Tg-CRND8. However, the claims are not limited to the method of disrupting the GRK5 distribution as set forth above. The base claim, claim 1, does not specify what other

methods could be used to disrupt normal GRK5 distribution other than stimulating with Aβ1-42/1-40. In addition, claim 1 fails to specify what other transgenic models could be used other than Tg-CRND8. The specification has not provided sufficient guidance as to enable one of skill in the art to practice the full scope of the invention since neither the prior art nor the specification provides compensatory information of other methods to disrupt GRK5 distribution. Thus, a skilled artisan cannot contemplate what other methods could be used in the claimed invention.

In addition, many potential mechanisms have been proposed to contribute to the pathogenesis of AD, for example, the accumulation of β-amyloid peptides (Hardy et al. Science 2002. 297: 353-356 cited in a prior office action). There are many possible mechanisms underlying the accumulation of β-amyloid peptides. It could be due to the mutation of APP because the β-amyloid peptides are derived from endoproteolysis of APP by β and γ-secretases or mutation in presenilin (PS) proteins. The deposition of Aβ in Alzheimer's patients could be due to the defect in APP processing resulting in excess of Aβ or the problem in the clearance of Aβ resulting in accumulation of Aβ. In addition, several mechanisms also have been proposed for Aβ clearance. Thus, it is unpredictable whether detecting a decreased GRK5 distribution could detect all pathogenesis of Alzheimer's disease.

Claim 7 recites a peptide. Applicant fails to teach what other peptides could be used in the claimed method other than Aβ1-40/1-42. Although Applicant describes a change of the cellular distribution of GRK5 after stimulating the neurons with soluble Aβ1-42/1-40 peptides in vitro by detecting with an anti-GRK5 antibody, Applicant fails to

provide sufficient guidance as to how to detect a distribution of GRK5 in vivo as in claim 34. Applicant fails to demonstrate that the current method could be used to detect the pathogenesis of AD in vivo from a healthy person or a potential AD patient. There is no guidance to enable one of skill in the art to administer soluble Aβ peptide to a live subject and to detect the change of cellular distribution of GRK5 in vivo and further conclude the change of cellular distribution of GRK5 is the cause of AD.

"The 'predictability or lack thereof' in the art refers to the ability of one skilled in the art to extrapolate the disclosed or known results to the claimed invention. If one skilled in the art can readily anticipate the effect of a change within the subject matter to which the claimed invention pertains, then there is predictability in the art. On the other hand, if one skilled in the art cannot readily anticipate the effect of a change within the subject matter to which that claimed invention pertains, then there is lack of predictability in the art. Accordingly, what is known in the art provides evidence as to the question of predictability. In particular,
the court in In re Marzocchi, 439 F.2d 220, 223-24, 169 USPQ 367, 369-70 (CCPA 1971)" See MPEP § 2164.03

Thus, the rejection of claims 1, 2, 7, 9-13 and 34 under 35 U.S.C. §112, first paragraph, because the specification does not enable the invention commensurate in scope with the claims is maintained.

The rejection of claims 1, 7 under 35 U.S.C. 112, first paragraph, for failing to meet the written description requirement is maintained for reasons of record in the previous office action.

Applicant argues that the rejection does not apply to amended claims because omitted steps have been added and the peptide has been specified to soluble Aβ. Applicant's arguments have been fully considered but they are not persuasive. Claims are drawn to a method of using a peptide to detect Alzheimer's pathogenesis in vitro or

in a transgenic model. However, Applicant fails to provide enough guidance as to what particular structures/characteristics are required for a peptide to be used in the claimed method as in claim 7. Applicant is in possession of β-amyloid peptide 1-42/1-40 that can be used to stimulate the change of GRK5 distribution as in the claimed method. However, Applicant is not in possession of other soluble peptides that could be used to disrupt the normal distribution of GRK5 in the claimed method. Therefore, the rejection of claims 1, 7 under 35 U.S.C.§ 112, first paragraph, for failing to meet the written description is maintained.

Conclusion

NO CLAIM IS ALLOWED.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry of a general nature or relating to the status of this general application should be directed to the Group receptionist whose telephone number is (571) 272-1600.

Papers relating to this application may be submitted to Technology Center 1600, Group 1649 by facsimile transmission. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). Should applicant wish to FAX a response, the current FAX number for Group 1600 is (571) 273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chang-Yu Wang, Ph.D. whose telephone number is (571) 272-4521. The examiner can normally be reached on Monday-Thursday and every other Friday from 8:30 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres, Ph.D., can be reached at (571) 272-0867.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CYW
January 11, 2007

JANET L. ANDRES
SUPERVISORY PATENT EXAMINER